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ABSTRACT

Focusing on protective and related service occupations, this document is one in a series of forty-one reprints from the Occupational Outlook Handbook providing current information and employment projections for individual occupations and industries through 1985. The specific occupations covered in this document include correction officers, firefighters, guards, police officers, state police officers, construction inspectors (government), health and regulatory inspectors (government), and occupational safety and health workers. The following information is presented for each occupation or occupational area: a code number referenced to the Dictionary of Occupational Titles; a description of the nature of the work; places of employment; training, other qualifications, and advancement; employment outlook; earnings and working conditions; and sources of additional information. In addition to the forty-one reprints covering individual occupations or occupational areas (CE 017 757-797), a companion document (CE 017 756) presents employment projections for the total labor market and discusses the relationship between job prospects and education. (BM)

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Protective and Related Service Occupations

Reprinted from the
Occupational Outlook Handbook,
1978-79 Edition.
U.S. Department of Labor
Bureau of Labor Statistics
1978

Bulletin 1955-11

Containing the midpoints of the legs of right triangle *RST*, where *R* is pt. (−5, 5), *S* is pt. (1, 1), and *T* is pt. (3, 4).

Containing the longer diagonal of a quadrilateral whose vertices are pts. (2, 2), (−2, −2), (1, −1), and (6, 4).

Show that the equations $y - 1 = \frac{1}{2}(x + 3)$ and $y - 4 = \frac{1}{2}(x -$ are equivalent.

An equation of the line containing pts. (−2, 3) and (4, −1) can be written in the form $y - 3 = -\frac{1}{2}(x + 2)$ or in the form $y + 1 = -\frac{1}{2}(x - 4)$, depending upon which point you take as (x_1, y_1). Show that the two equations are equivalent.

Show that the equations are equivalent.

$$y - y_1 = \frac{y_2 - y_1}{x_2 - x_1}(x - x_1) \qquad y - y_2 = \frac{y_1 - y_2}{x_1 - x_2}(x - x_2)$$

State the equation of a line through pt. (p, q) and parallel to a line containing pts. (a, b) and (c, d). $(a \neq c)$.

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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PROTECTIVE AND RELATED SERVICE OCCUPATIONS

The growth of our Nation's population and economy has put an increasing emphasis on protective services. Each city, suburban area, and national port of entry requires protective and related service workers to check crime, minimize loss of life and property, and enforce regulations that protect the health and safety of our citizens at home and on the job.

Careers in protective and related service occupations require varied combinations of education and experience. Workers such as FBI special agents and some Federal Government inspectors must have at least a bachelor's degree, while guards may have less than a high school education. Most occupations in this group, however, require a high school diploma. In many cases, a college degree is an asset for advancement to higher level positions.

In addition to educational requirements, most workers in protective and related services must undergo formal training programs and get on-the-job experience before they are fully qualified. Training programs last from several days to a few months and emphasize specific job-related skills.

Personal qualifications such as honesty and an understanding of human nature are important. Persons seeking careers in protective and related service occupations should sincerely desire to serve the community and be able to exercise proper judgment under a variety of conditions.

This section describes the work of several occupations in protective and related services: correction officers, FBI special agents, firefighters, guards, police officers, State police officers, occupational safety and health workers, and health, regulatory, and construction inspectors.

CORRECTION OFFICERS

(D.O.T. 372.868 and 375.168 and .868)

Nature of the Work

Correction officers are charged with the safekeeping of persons who have been arrested, are awaiting trial, or who have been tried and convicted of a crime and sentenced to serve time in a correctional institution. They maintain order within the institution, enforce rules and regulations, and often counsel inmates.

To make sure inmates are orderly and obey rules, correction officers keep a close watch on everything the immates do—working, exercising, eating, and bathing. They give and oversee work assignments for inmates, as well as instruct and help them on specific tasks. Sometimes it is necessary to search inmates for forbidden items, such as weapons or drugs, to settle disputes between inmates, and to enforce discipline. They cannot show favoritism to any inmate and must report all who violate rules. To prevent escapes, officers serve as guards on towers and at gates. They count inmates to make sure all are present during transfers and activities.

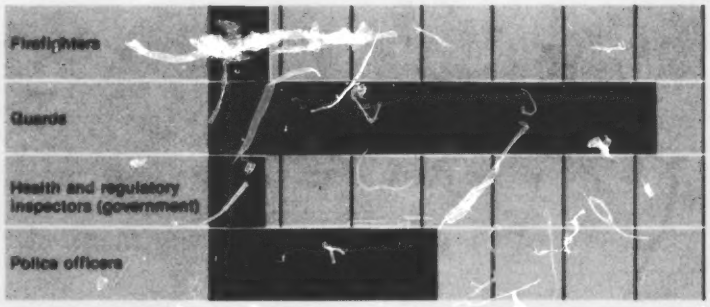
Correction officers examine facilities to assure the safety and security of prisoners. They check cells and other areas of the institution for unsanitary conditions, fire hazards, and evidence of infraction of rules by inmates. Periodically, they inspect locks, windowbars, grill doors, and gates for tampering.

Correction officers report orally and in writing on inmate conduct and on the quality and quantity of work done by inmates. Officers also report disturbances, violations of rules, and any unusual occurrences. They keep a record of their activities in a notebook.

Correction officers escort inmates to and from cells and other areas and admit and accompany authorized visitors within the facility. From time to time, they may censor mail, administer first aid, or assist police authorities by investigating crimes committed within the institution and by searching for escaped inmates.

Counseling inmates and helping them with problems also is an important part of the correction officer's job. Officers play a key role in efforts to rehabilitate inmates by helping them adjust to life in the institution, preparing them for later civilian life, and counseling them on how to avoid future criminal behavior. In some in-

Except for guards, most openings in the protective service occupations result from growth in employment needs



Source: Bureau of Labor Statistics

stitutions, officers lead or participate in group counseling sessions. More often, however, the counseling is informal. Officers may arrange a change in a daily schedule so that an inmate has an opportunity to visit the library, help inmates get news of their families, talk over personal problems that may have led to committing a crime, or suggest where to look for a job after release from prison.

Correction sergeants directly supervise correction officers. They usually are responsible for maintaining security and directing the activities of a group of inmates during an assigned watch.

Places of Employment

There were about 90,000 correction officers in 1976. More than 9 out of 10 correction officers work for State and local governments; the remainder work for the Federal Government.

Most correction officers work in relatively large institutions located outside metropolitan areas, although a significant number work in smaller facilities located in towns.

Correction officers oversee work assignments of inmates and instruct them in specific tasks.

Training, Other Qualifications, and Advancement

The Federal Government, as well as almost every State and a few localities, provides training for correction officers. Some States—Maryland and New York are two—have special training academies. Most States, however, provide informal on-the-job training.

Academy trainees generally receive 4 to 8 weeks of instruction on institutional policies, regulations and procedures, the behavior and custody of inmates, writing reports, and security. On-the-job trainees receive 2 to 6 months of similar training in an actual job setting under the guidance of an experienced officer. Experienced officers sometimes receive in-service training to keep abreast of new ideas and procedures.

Most penal systems require that correction officers be at least 21 years old and have a high school education or its equivalent, or else work experience that qualifies them. They must be in good health. Many States require candidates to meet formal standards of height, weight, vision, and hearing. Strength, good judgment, and the ability to think and act quickly are assets. Some States require candidates to have 1 or 2 years' experience in corrections or related police work. A few States require candidates to pass a written examination.

With additional education, experience, and training, qualified officers may advance to correction sergeant or other supervisory or administrative positions. Officers sometimes transfer to related areas, such as probation and parole.

Employment Outlook

Employment of correction officers is expected to increase about as fast as the average for all occupations through the mid-1980's. The likely population increase within correctional facilities is expected to create growth in the employment of correction officers. Many additional openings will result from job turnover and the need to replace workers who die or retire.

Earnings and Working Conditions

In 1976, salaries for correction officers varied widely by level of government. At the Federal level, the starting salary was $10,370 per year; the average salary for all Federal correction officers and correction sergeants was $12,675 per year. At the State level, starting salaries averaged $8,900 per year while maximum salaries averaged $11,400 per year. Salaries of correction sergeants range from an average minimum of $10,259 to an average maximum of $13,426 at the State level.

Correction officers usually work an 8-hour day, 40-hour week. Prison security must be provided around the clock, which means some officers work weekends, holidays, and nights. During emergencies, officers may work overtime, for which they are paid straight time, or time-and-one-half, or are given equal time off.

Officers may work either indoors with inmates or outdoors on towers or at gates. Although corrections work is not normally hazardous, there is always the threat of trouble by inmates.

Sources of Additional Information

Information about entrance requirements, training, and career opportunities for correction officers may be obtained from Federal and State civil service commissions, State departments of corrections, or nearby correctional institutions and facilities.

Additional information describing a career as a correction officer is available from:

American Correctional Association, National Offender's Services Contact Center, P.O. Box 81826, Lincoln, Neb. 68501.

FBI SPECIAL AGENTS

(D.O.T. 375.168)

Nature of the Work

Federal Bureau of Investigation (FBI) special agents investigate violations of Federal laws in connection with bank robberies, kidnappings, white-collar crime, thefts of Government property, organized crime, espionage, and sabotage. The FBI, which is part of the U.S. Department of Justice, has jurisdiction over many different Federal investigative matters. Special agents, therefore, may be assigned to any type of case, although those with specialized training usually work on cases related to their background. Agents with an accounting background, for example, may investigate white-collar crimes such as bank embezzlements, or fraudulent bankruptcies or land deals.

Because the FBI is a fact-gathering agency, its special agents function strictly as investigators, collecting evidence in cases in which the U.S. Government is or may be an interested party. In their casework, special agents conduct interviews, examine records, observe the activities of suspects, and participate in raids. Because the FBI's work is highly confidential, special agents may not disclose any of the information gathered in the course of their official duties to unauthorized persons, including members of their families. Frequently agents must testify in court about cases that they investigate.

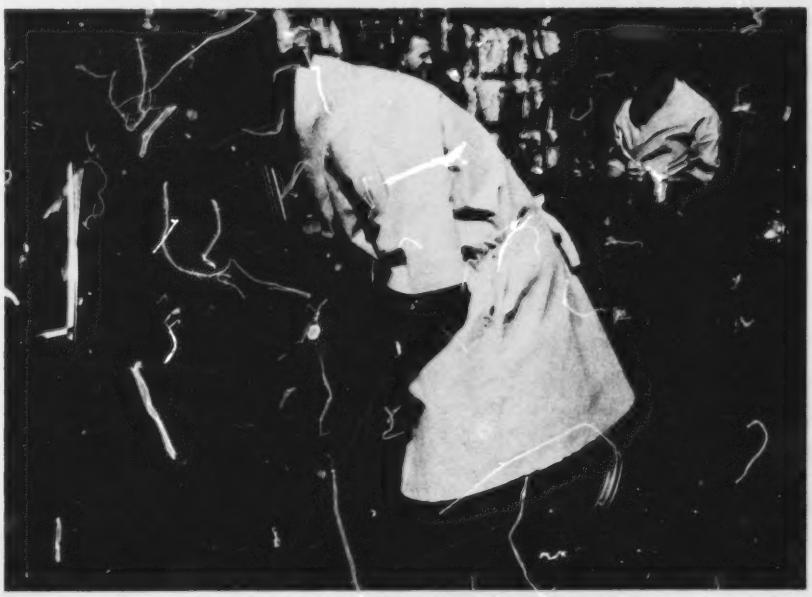
Although they work alone on most assignments, agents communicate with their supervisors by radio or telephone as the circumstances dictate. In performing potentially dangerous duties, such as arrests and raids, two agents or more are assigned to work together.

Places of Employment

About 8,600 persons were special agents in 1976. Most agents were assigned to the FBI's 59 field offices located throughout the Nation and in Puerto Rico. They worked in cities where field office headquarters are located or in resident agencies (suboffices) established under field office supervision to provide prompt and efficient handling of investigative matters arising throughout the field office territory. Some agents are assigned to the Bureau headquarters in Washington, D.C., which supervises all FBI activities.

Training, Other Qualifications, and Advancement

To be considered for appointment as an FBI special agent, an applicant usually must be a graduate of a State-accredited law school or a college graduate with a major in accounting.



Special agents process a car for fingerprints.

The law school training must have been preceded by at least 2 years of undergraduate college work.

From time to time, as the need arises, the FBI accepts applications from persons who have a 4-year college degree with a physical science major or fluency in a foreign language, or who have 3 years of professional, executive, complex investigative, or other specialized experience.

Applicants for the position of FBI special agent must be citizens of the United States, be at least 23 years old but not have reached their 35th birthday before they begin duty and be willing to serve anywhere in the United States or Puerto Rico. They must be capable of strenuous physical exertion, and have excellent hearing and vision, normal color perception, and no physical defects that would prevent their using firearms or participating in dangerous assignments. All applicants must pass a rigid physical examination, as well as written and oral examinations testing their aptitude for meeting the public and conducting investigations. All of the tests except the physical examinations are given by the FBI at its facilities. Background and character investigations are made of all applicants. Appointments are made on a probationary basis and become permanent after 1 year of satisfactory service.

Each newly appointed special agent is given about 15 weeks of training at the FBI Academy at the U.S. Marine Corps Base in Quantico, Va. before assignment to a field office. During this period, agents receive intensive training in defensive tactics and the use of firearms. In addition, they are thoroughly schooled in Federal criminal law and procedures, FBI rules and regulations, fingerprinting and investigative work. After assignment to a field office, the new agent usually works closely with an experienced agent for about 2 weeks before handling any assignments independently.

All administrative and supervisory jobs are filled from within the ranks by selecting those FBI special agents who have demonstrated the ability to assume more responsibility.

Employment Outlook

The jurisdiction of the FBI has expanded greatly over the years. Although it is impossible to forecast special agent personnel requirements, employment may be expected to increase with growing FBI responsibilities.

The FBI provides a career service and its rate of turnover is traditionally low. Nevertheless, the FBI is always interested in applications from qualified persons who would like to be considered for the position of special agent.

Earnings and Working Conditions

The entrance salary for FBI special agents was $15,524 in late 1976. Special agents are not appointed under Federal Civil Service regulations, but, like other Federal employees, they receive periodic within-grade salary raises if their work performance is satisfactory; they can advance in grade as they gain experience. Salaries of supervisory agents start at $28,725 a year.

Special agents are subject to call 24 hours a day and must be available for assignment at all times. Their duties call for some travel, for they are assigned wherever they are needed in the United States or Puerto Rico. They frequently work longer than the customary 40-hour week and, under specified conditions, receive overtime pay up to about $3,900 a year. They are granted paid vacations, sick leave, and annuities on retirement. Agents are required to retire at age 55 if they have served at least 20 years.

Sources of Additional Information

The Federal Bureau of Investigation, U.S. Department of Justice, Washington, D.C. 20535.

FIREFIGHTERS

(D.O.T. 373.118 through .884)

Nature of the Work

Every year fires destroy thousands of lives and property worth millions of dollars. Firefighters help protect the public against this danger. This statement gives information only about paid (professional) firefighters; it does not cover the many thousands of volunteer firefighters in communities across the country.

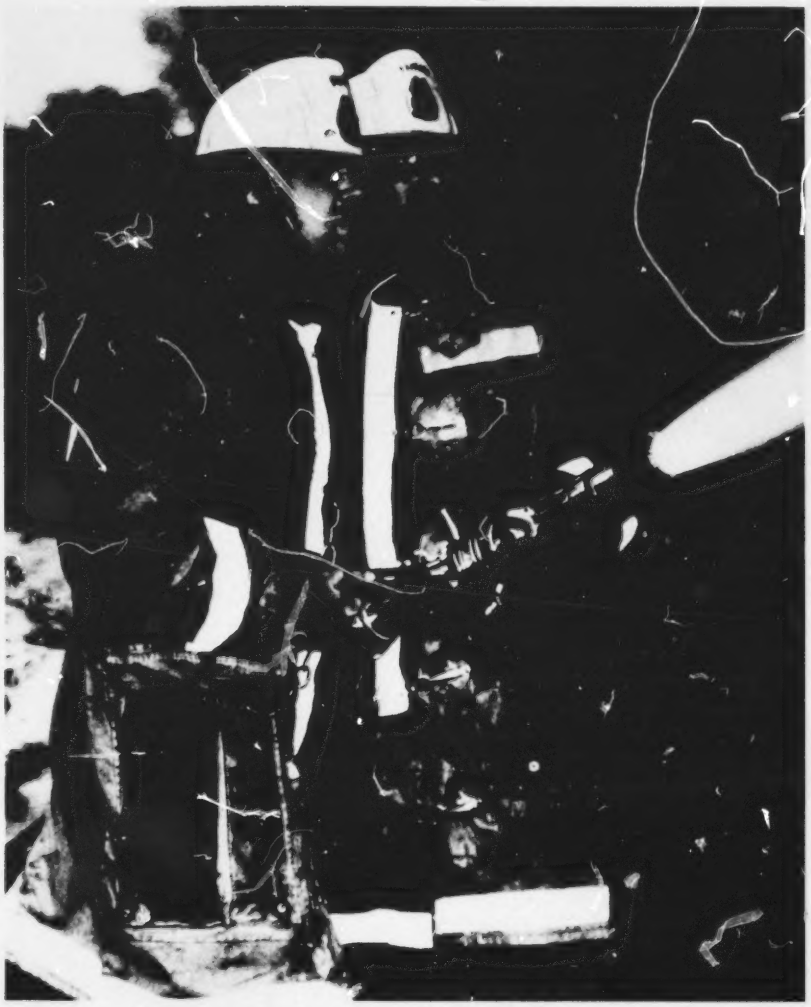
During duty hours, firefighters must be prepared to respond to a fire and handle any emergency that arises. Because firefighting is dangerous and complicated, it requires organization and teamwork. At every fire, firefighters perform specific duties assigned by a company officer such as lieutenant, captain, or other department officer: they may connect hose lines to hydrants, operate a pump, or position ladders. Because their duties may change several times while the company is in action they must be skilled in many different firefighting activities such as rescue, ventilation, and salvage. Some firefighters operate fire apparatus, emergency rescue vehicles, and fire boats. In addition, they help people to safety and administer first aid.

Most fire departments also are responsible for fire prevention activities. They provide specially trained personnel to inspect public buildings for conditions that might cause a fire. They may check building plans, the number and working condition of fire escapes and fire doors, the storage of flammable materials, and other possible hazards. In addition, firefighters educate the public about fire prevention and safety measures. They frequently speak on this subject before school assemblies and civic groups, and, in some communities, they inspect private homes for fire hazards

Between alarms, firefighters spend much time improving their skills and doing maintenance work. They also have practice drills, clean and lubricate equipment, and stretch hoses to dry.

Places of Employment

More than 210,000 persons worked as firefighters in 1976. Nine out of ten worked in municipal fire departments. Some very large cities have several thousand firefighters on the payroll while many small towns have fewer than 25. Some firefighters



Firefighting requires organization and teamwork.

work in fire departments on Federal installations; others work in large manufacturing plants.

Training, Other Qualifications, and Advancement

Applicants for municipal firefighting jobs must pass a written test, a medical examination, and tests of strength, physical stamina, and agility, as specified by local regulations. These examinations are open to men and women who are at least 18 years of age, meet certain height and weight requirements, and have a high school education or equivalent. Those who receive the highest scores on the examinations have the best chances for appointment. Extra credit usually is given for military service. Experience gained as a volunteer firefighter or through training in the Armed Forces also may improve an applicant's chances for appointment.

As a rule, beginners in large fire departments are trained for several weeks at the city's fire school. Through classroom instruction and practice drills, the recruits study firefighting techniques, fire prevention, local building codes, and first aid; also, they learn how to use axes, chemical extinguishers, ladders, and other equipment. After completing this training, they are assigned to a fire company where they are evaluated during a probationary period.

Experienced firefighters often continue study to improve their job performance and prepare for promotional examinations. Fire departments frequently conduct training programs, and many colleges and universities offer courses such as fire engineering and fire science that are helpful to firefighters.

Among the personal qualities firefighters need are mental alertness, courage, mechanical aptitude, endurance, and a sense of public service. Initiative and good judgment are extremely important because firefighters often must make quick decisions in emergency situations. Because members of a crew eat, sleep, and work closely together under conditions of stress and danger, they should be dependable and able to get along well with others in a group. Leadership qualities are assets for officers who must establish and maintain a high degree of discipline and efficiency as well as direct the activities of the firefighters in their companies.

Opportunities for promotion are good in most fire departments. As firefighters gain experience, they may advance to a higher rank. After 3 to 5 years of service they may become eligible for promotion to the grade of lieutenant. The line of further promotion usually is to captain, then battalion chief, assistant chief, deputy chief, and finally to chief. Chances for advancement generally depend upon each candidate's position on the promotion list, as determined by the score on a written examination, his or her supervisor's rating, and seniority.

Employment Outlook

Employment of firefighters is expected to increase about as fast as the average for all occupations through the mid-1980's to meet the growing need for fire protection. Thousands of jobs will become available each year due to growth and the need to replace those who die, retire, or leave the occupation.

Employment should rise as new fire departments are formed and as others enlarge their fire prevention sections. Much of the expected increase will occur in smaller communities as volunteer firefighters are replaced by professionals. Additional

firefighters also may be required as more cities shorten the workweek for firefighters.

The number of firefighters in a community ultimately depends upon the availability of funds from the municipal government for salaries and equipment. Fire protection is an essential service and citizens are likely to exert considerable pressure on city officials to expand fire protection coverage. However, local governments must live within their budgets. This means that in some financially troubled cities, firefighter employment probably will remain at current levels or decline while in other cities, employment is likely to increase substantially to meet the needs of an expanding population.

The number of people who qualify for firefighter jobs in large cities usually is greater than the number of job openings, even though the written examination and physical requirements eliminate many applicants. Therefore, competition among candidates in urban areas is apt to remain keen. Opportunities should be much better in smaller communities.

Earnings and Working Conditions

In 1976, average entrance salaries for beginning full-time firefighters ranged from $9,900 to $12,200 a year, depending on city size and region of the country. Average maximum salaries varied from $12,600 to $14,850 annually. Earnings for firefighters are lowest in the South and highest in the West, and generally are higher in suburban districts than in large cities. Average earnings of all firefighters are about one and one-half times as much as the average of all nonsupervisory workers in private industry, except farming.

Fire lieutenants started at an average salary of $13,700 a year in 1976 and earned an average maximum salary of $16,100. Fire captains started at an average salary of $15,450 a year and earned an average maximum of $18,300.

Practically all fire departments furnish allowances to pay for protective clothing (helmets, boots, and rubber coats) and many also provide dress uniforms.

In some cities, firefighters are on duty for 24 hours, then off for 48 hours, and receive an extra day off at intervals. In other cities, they work a day shift of 10 hours and a night shift of 14; shifts are rotated at frequent intervals. The average workweek for firefighters is 52 hours, but is only 42 hours in many large cities, particularly in the East. Some firefighters work as many as 84 hours a week. Fire lieutenants and fire captains work the same hours as the firefighters they supervise. Duty hours may include some time when firefighters are free to read, study, or pursue other personal interests. In addition to scheduled hours, firefighters often must work extra hours when they are bringing a fire under control. When overtime is worked, most fire departments give compensatory time off or extra pay.

The job of a firefighter involves risk of death or injury from sudden cave-ins of floors or toppling walls and danger from exposure to flames and smoke. Firefighters also may come in contact with poisonous, flammable, and explosive gases and chemicals. In addition, they work in all types of weather.

Firefighters generally are covered by liberal pension plans that often provide retirement at half pay at age 50 after 25 years of service or at any age if disabled in the line of duty. Firefighters also receive paid vacations. Provisions for sick leave usually are liberal. Health and surgical benefit plans are offered in many fire departments and compensation is provided for firefighters injured in the line of duty. Most fire departments provide paid holidays—ranging to 11 or more a year—or compensatory time off for working on holidays.

About 8 out of 10 firefighters are members of the International Association of Firefighters (AFL-CIO).

Sources of Additional Information

Information on obtaining a job as a firefighter is available from local civil service commission offices or fire departments.

Information about a career as a firefighter may be obtained from:

International Association of Fire Chiefs, 1725 K St. NW., Washington, D.C. 10006.

National Fire Protection Association, 470 Atlantic Ave., Boston, Mass. 02210.

Additional information on the salaries and hours of work of firefighters in various cities is published annually by the International City Management Association in its *Municipal Yearbook*, which is available in many libraries.

GUARDS

(D.O.T. 372.868)

Nature of the Work

Guards patrol and inspect property to protect it against fire, theft, vandalism, and illegal entry. The specific duties of these workers, however, vary depending on the size, type, and location of their employer.

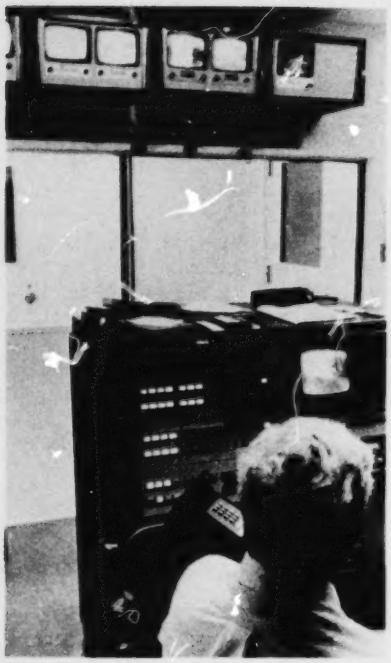
In office buildings, banks, hospitals, and department stores, guards protect records, merchandise, money, and equipment. In department stores they often work with undercover detectives watching for theft by customers or store employees.

At ports and railroads, guards protect merchandise in shipment as well as property and equipment. They insure that nothing is stolen while being loaded or unloaded, and watch for fires, prowlers, and trouble among work crews. Sometimes they direct traffic.

Guards who work in public buildings, such as museums or art galleries, protect paintings or exhibits from fire, theft, or damage. They also answer routine questions from visitors and sometimes guide traffic.

In large factories, aircraft plants, and defense installations where valuable information must be protected, some guards check the credentials of persons and vehicles entering and leaving the premises. University, park, or recreation guards perform similar duties and also may issue parking permits and direct traffic.

At social affairs, sports events, conventions, and other public gath-



Bank guards maintain the security of the bank by monitoring closed circuit television cameras.

erings, guards maintain order, give information, and watch for persons who may cause trouble.

In a large organization, a security officer often is in charge of the guard force; in a small organization, a single worker may be responsible for security. Patrolling usually is done on foot; but if the property is large, guards may make their rounds by car or motor scooter.

As they make their rounds, guards check all doors and windows, see that no unauthorized persons remain after working hours, and insure that fire extinguishers, alarms, sprinkler systems, furnaces, and various electrical and plumbing systems are working properly. They sometimes set thermostats or turn on machines for janitorial workers.

Guards usually are uniformed and often carry a nightstick or gun. They also may carry a flashlight, whistle, two-way radio, and a watch clock—a device that indicates the time at which they reach various checkpoints. (The related occupation of correction officer also is discussed in this section on protective service occupations.)

Places of Employment

In 1976, almost 500,000 persons worked as guards. Most work in office buildings, government installations and buildings, stores, hotels, banks, schools, and manufacturing plants. Industrial security firms and guard agencies employ about 40 percent of all guards; agency guards work under contract in private business establishments of all types, as well as in some government facilities.

Although guard jobs are found throughout the country, most are located in highly industrialized areas.

Training, Other Qualifications, and Advancement

Most employers prefer guards who are high school graduates. Applicants with less than a high school education usually are tested for their reading and writing abilities and their competence in following written and oral instructions. Employers also seek people who have had experience in the military police or in State and local police departments. Most persons who enter guard jobs have prior work experience, although it is usually unrelated. Many have retired from careers in the military or other protective services, and their guard employment is a second career.

Candidates for guard jobs in the Federal Government must be veterans, have some experience as guards, and pass a written examination. For most Federal guard positions, applicants must qualify in the use of firearms. A driver's permit is required for some jobs.

Many employers give newly hired guards instruction before they start the job and also provide several weeks of on-the-job training. Guards may be taught the use of firearms, the administration of first aid, the procedure to use in handling various emergencies, and ways to spot and deal with security problems.

Applicants are expected to have good character references, no police record, good health—especially in hearing and vision—and good personal habits such as neatness and dependability. They should be mentally alert, emotionally stable, and physically fit to cope with emergencies. Some employers require guards to meet height and weight specifications or to be within a certain age range.

Although guards in small companies receive periodic salary increases, advancement is likely to be limited. However, most large organizations use a military type of ranking that offers advancement in position and salary. Guard experience enables some persons to transfer to police jobs that offer higher pay and greater opportunities for advancement. Guards with some college education may advance to jobs that involve administrative duties or the prevention of espionage and sabotage.

Employment Outlook

Employment of guards is expected to grow faster than the average for all occupations through the mid-1980's. Increased concern for crime and vandalism will heighten the need for security in and around plants, stores, and recreation areas and is expected to cause rapid growth of agency guard employment. Additional guards will be needed by banks, manufacturing plants, and Federal, State, and local governments to provide better security and monitor remote cameras, alarm systems, and other electronic surveillance equipment. Many openings also will arise as guards retire, die, or leave their jobs for other reasons. Opportunities will be most plentiful for persons seeking work on night shifts.

Earnings and Working Conditions

Wages of guards working in 36 urban areas were estimated to average $3.23 an hour in 1976. Those working in the North earned more than the average while guards employed in the South and West earned somewhat less. Hourly wages of guards were estimated to average $5.04 in manufacturing; $5.29 in transportation and public utilities; $4.10 in banking, finance, insurance, and real estate; $4.22 in wholesale trade; $3.70 in retail trade; and $2.61 in the

various service industries, including security and guard agencies. Guards who were members of unions earned more than average.

Depending on their experience, newly hired guards in the Federal Government earned between $142 and $160 a week. Top supervisory guards in the Federal Government may be paid up to $271 a week. These workers usually receive overtime pay as well as a wage differential for the second and third shifts. Guards generally have paid vacations, sick leave, and insurance and pension plans.

About two-thirds of all guards work at night; the usual shift lasts 8 hours. Some employers have three shifts where guards rotate to divide daytime, weekend, and holiday work equally. Guards usually eat on the job instead of taking a regular lunch break.

Guards often work alone, so that no one is nearby to help if an accident or injury occurs. Some large firms therefore use a reporting service that enables guards to be in constant contact with a central station outside the plant. If they fail to transmit an expected signal, the central station investigates.

Sources of Additional Information

Further information about work opportunities for guards is available from local employers and the nearest State employment service office.

POLICE OFFICERS

(D.C.T. 375.118 through .868, and 377.868)

Nature of the Work

The security of our Nation's cities and towns greatly depends on the work of local police officers whose jobs range from controlling traffic to preventing and investigating crimes. Whether on or off duty, these officers are expected to exercise their authority whenever necessary.

Police officers who work in a small community have many duties. In the course of a day's work, they may direct traffic at the scene of a fire, investigate a housebreaking, and give first aid to an accident victim. In a large police department, by contrast, officers usually are assigned to a specific type of duty. Most officers are detailed either to patrol or to traffic duty; smaller numbers are assigned to special work such as accident prevention or operation of communications systems. Others work as detectives (plainclothes officers) assigned to criminal investigation; still others, as experts in chemical and microscopic analysis, firearms identification, and handwriting and fingerprint identification. In very large cities, a few officers may work with special units such as mounted and motorcycle police, harbor patrols, helicopter patrols, canine corps, mobile rescue teams, and youth aid services.

Most new recruits begin on patrol duty. Recruits may be assigned to such varied areas as congested business districts or outlying residential areas. They may cover their beats alone or with other officers. They may ride in a police vehicle or walk on "foot" patrol. In any case, they become thoroughly familiar with conditions throughout their area and, while on patrol, remain alert for anything unusual. They note suspicious circumstances, such as open windows or lights in vacant buildings, as well as hazards to public safety such as burned-out street lights or fallen trees. Officers also watch for stolen automobiles and enforce traffic regulations. At regular intervals, they report to police headquarters through call boxes, by radio, or by walkie-talkie. They prepare reports about their activities and may be called on to testify in court when cases result in legal action.

Places of Employment

About 500,000 full-time officers worked for local police departments in 1976. Some cities have very large police forces. For example, New York has about 30,000 police officers and Chicago has nearly 13,000. Hundreds of small communities employ fewer than 25 officers each.

Training, Other Qualifications, and Advancement

Local civil service regulations govern the appointment of police offi-

Police officers often work independently in carrying out their duties.

cers in practically all large cities and in many small ones. Candidates must be U.S. citizens, usually at least 21 years of age, and must meet certain height and weight standards. Eligibility for appointment depends on performance in competitive examinations as well as on education and experience. The physical examinations often include tests of strength and agility.

Because personal characteristics such as honesty, good judgment, and a sense of responsibility are especially important in police work, candidates are interviewed by a senior officer at police headquarters, and their character traits and background are investigated. In some police departments, candidates also may be interviewed by a psychiatrist or a pyschologist, or be given a personality test. Although police officers work independently, they must perform their duties in line with laws and departmental rules. They should enjoy working with people and serving the public.

In large police departments, where most jobs are found, applicants usually must have a high school education. A few cities require some college training and some hire law enforcement students as police interns. A few police departments accept applicants who have less than a high school education as recruits, particularly if they have worked in a field related to law enforcement.

More and more, police departments are encouraging applicants to take post-high school training in sociology and psychology. As a result, more than 1,000 junior colleges, colleges, and universities now offer programs in law enforcement or criminal justice. Other courses helpful in preparing for a police career include English, American history, civics and government, business law, and physics. Physical education and sports are especially helpful in developing the stamina and agility needed for police work.

In some large cities, young persons who have completed high school can enter police work as police cadets, or trainees, while still in their teens. As paid civilian employees of the police department, they attend classes to learn police skills and do clerical work. They may be appointed to the regular force at age 21 if they have all the necessary qualifications.

Before their first assignments, officers usually go through a period of training. In small communities, recruits learn by working for a short time with experienced officers. Training provided in large city police departments is more formal and may last several weeks or a few months. This training includes classroom instruction in constitutional law and civil rights; in State laws and local ordinances; and in accident investigation, patrol, and traffic control. Recruits learn how to use a gun, defend themselves from attack, administer first aid, and deal with emergencies.

Police officers usually become eligible for promotion after a specified length of service. In a large department, promotion may allow an officer to specialize in one type of police work such as laboratory work, traffic control, communications, or work with juveniles. Promotions to the rank of sergeant, lieutenant, and captain usually are made according to a candidate's position on a promotion list, as determined by scores on a written examination and on-the-job performance.

Many types of training help police officers improve their performance on the job and prepare for advancement. Through training given at police department academies and colleges, officers keep abreast of crowd-control techniques, civil defense, legal developments that affect their work, and advances in law enforcement equipment. Many police departments encourage officers to work toward college degrees, and some pay all or part of the tuition.

Employment Outlook

Police work is attractive to many. The job frequently is challenging and involves much responsibility. Furthermore, layoffs are rare. In periods of relatively high unemployment, the number of persons seeking police employment may be greater than the number of openings. However, the written examinations and strict physical requirements always eliminate many applicants. The outlook should be good for persons having some college training in law enforcement.

Law enforcement is complex and requires an approach tailored to the particular problems of each city. The police department of a city with a large, mobile population is likely to emphasize traffic control, preventive patrol, and cooperation with police agencies in the surrounding areas. In smaller cities, or those with well-established communities and fewer employment and recreation centers, police work may be less specialized. In either case, however, the usual way of increasing police protection is to provide more officers for duty.

The number of officers employed will depend on the amount of money made available by local governments. Because police work is essential, it is likely that funding for law enforcement will have high priority, and that the employment of city police officers will rise faster than the average for other occupations through the mid-1980's.

Earnings and Working Conditions

In 1976, entry level salaries for police officers averaged nearly $11,300 a year, although they varied widely from city to city. In some smaller communities, officers started at less than $8,400 a year, while some major cities offered over $15,000 a year to new employees. Most officers receive regular salary increases during the first few years of employment until they reach a set maximum for their rank. Maximum earnings averaged $13,900 a year in 1976, and exceeded $17,000 a year in some areas.

Promotion to a higher rank brings a higher basic salary. The average starting salary for sergeants, for example, was almost $14,500 a year in 1976; more than $18,000 a year in the largest cities. Beginning salaries for lieutenants averaged more than $16,300 a year in 1976. In general, police officers are paid about 1 1/2 times as much as nonsupervisory workers in private industry, except farming.

Police departments usually provide officers with special allowances for uniforms and furnish revolvers,

night sticks, handcuffs, and other required equipment.

The scheduled work week for police officers usually is 40 hours. Because police protection must be provided around the clock in all but the smallest communities, some officers are on duty over weekends, on holidays, and at night. Police officers are subject to call any time their services are needed and may work overtime in emergencies. In some departments, overtime is paid at straight time or time and one-half; in others, officers may be given an equal amount of time off on another day of the week.

Police officers generally are covered by liberal pension plans, enabling many to retire at half pay by the time they reach age 55. In addition, paid vacations, sick leave, and health and life insurance plans frequently are provided.

Police officers may have to work outdoors for long periods in all kinds of weather. The injury rate is higher than in many occupations and reflects the risks officers take in pursuing speeding motorists, capturing lawbreakers, and dealing with public disorder.

Sources of Additional Information

Information about entrance requirements may be obtained from local civil service commissions or police departments.

Additional information describing careers as police officers is available from:

International Association of Chiefs of Police, 11 Firstfield Rd., Gaithersburg, Md. 20760.

STATE POLICE OFFICERS

(D.O.T. 375.118, .138, .168, .228, .268, and .388)

Nature of the Work

The laws and regulations that govern the use of our Nation's roadways are designed to insure the safety of all citizens. State police officers (sometimes called State troopers) patrol our highways and enforce these laws.

State police officers issue traffic tickets to motorists who violate the law. At the scene of an accident, they direct traffic, give first aid, call for emergency equipment including ambulances, and write reports to be used in determining the cause of the accident.

In addition, State police officers provide services to motorists on the highways. For example, they radio for road service for drivers with mechanical trouble, direct tourists to their destination, or give information about lodging, restaurants, and tourist attractions.

State police officers also provide traffic assistance and control during road repairs, fires, and other emergencies, as well as during special occurrences such as parades and sports events. They sometimes check the weight of commercial vehicles, conduct driver examinations, and give information on highway safety to the public.

In addition to highway responsibilities, State police may investigate crimes, particularly in areas that do not have a local police force. They sometimes help city or county police catch lawbreakers and control civil disturbances. State highway patrols, however, normally are restricted to vehicle and traffic matters.

Some officers work with special State police units such as the mounted police, canine corps, and marine patrols. Others instruct trainees in State police schools, pilot police aircraft, or specialize in fingerprint classification or chemical and

State police officers usually take care of vehicle and traffic matters on the State's highways.

microscopic analysis of criminal evidence.

State police officers also write reports and maintain police records. Some officers, including division or bureau chiefs responsible for training or investigation and those who command police operations in an assigned area, have administrative duties.

Places of Employment

About 48,000 State police officers were employed in 1976.

The size of State police forces varies considerably. The largest force (in California) has over 5,000 officers; the smallest (in North Dakota) has fewer than 100. One State (Hawaii) does not maintain a police force.

Training, Other Qualifications, and Advancement

State civil service regulations govern the appointment of State police officers. All candidates must be citizens of the United States. Other entry requirements vary, but most States require that applicants have a high school education or an equivalent combination of education and experience and be at least 21 years old.

Officers must pass a competitive examination and meet physical and personal qualifications. Physical requirements include standards of height, weight, and eyesight. Tests of strength and agility often are required. Because honesty and a sense of responsibility are important in police work, an applicant's character and background are investigated.

Although State police officers work independently, they must perform their duties in line with department rules. They should want to serve the public and be willing to work outdoors in all types of weather.

In all States, recruits enter a formal training program for several months. They receive classroom instruction in State laws and jurisdictions, and they study procedures for accident investigation, patrol, and traffic control. Recruits learn to handle firearms, defend themselves from attack, handle an automobile at high speeds, and give first aid. After gaining experience, some officers take advanced training in police science, administration, law enforcement, or criminology. Classes are held at junior colleges, colleges and universities, or special police institutions such as the National Academy of the Federal Bureau of Investigation.

High school and college courses in English, government, psychology, sociology, American history, and physics help in preparing for a police career. Physical education and sports are useful for developing stamina and agility. Driver education courses and military police training also are helpful.

Police officer recruits serve a probationary period ranging from 6 months to 3 years. After a specified length of time, officers become eligible for promotion. Most States have merit promotion systems that require officers to pass a competitive examination to qualify for the next highest rank. Although the organization of police forces varies from State to State, the typical avenue of advancement is from private to corporal, to sergeant, to first sergeant, to lieutenant, and then to captain.

In some States, high school graduates may enter State police work as cadets. These paid civilian employees of the police organization attend classes to learn various aspects of police work and are assigned nonenforcement duties. Cadets who qualify may be appointed to the State police force at age 21.

Employment Outlook

State police employment is expected to grow about as fast as the average for other occupations. Although most jobs will result from this growth, some openings will be created as officers retire, die, or leave the occupation for other reasons.

Although some State police will be needed in criminal investigation and other nonhighway functions, the greatest demand will be for officers to work in highway patrol. This is the result of a growing, more mobile population. In ever-increasing numbers, Americans are using the motor vehicle as a means of transportation and a source of recreation. Motorcycles, campers, and other recreational vehicles will continue to add to the Nation's traffic flow and require additional officers to insure the safety of highway users.

Because law enforcement work is becoming more complex, specialists will be needed in crime laboratories and electronic data processing centers to develop administrative and criminal information systems. However, in many departments, these jobs will be filled by civilian employees rather than uniformed officers.

Earnings and Working Conditions

In 1976, beginning salaries for State police officers averaged about $10,400 a year. Officers generally receive regular salary increases, based on experience and performance, until a specified maximum is reached. Maximum salaries averaged $13,600 a year in 1976, but ranged to more than $15,000 a year in some States. Although starting salaries are normally higher in the West and lower in the South, State police officers on the average earn about 1 1/2 times as much as nonsupervisory workers in private industry, except farming.

Earnings increase with promotions to higher ranks. State police sergeants received average starting salaries of $12,350 a year in 1976, and average maximum salaries of close to $15,800. Lieutenants received average starting salaries of $14,200 a year and average maximum salaries of more than $18,300.

State police agencies usually provide officers with uniforms, firearms, and other necessary equipment, or give special allowances for their purchase.

In many States, the scheduled workweek for police officers is 40 hours. Although the workweek is longer in some States, the trend is toward a 40-hour week. Since police protection must be provided around the clock, some officers are on duty over weekends, on holidays, and at night. Police officers also are subject to emergency calls at any time.

State police usually are covered by liberal pension plans. Paid vacations, sick leave, medical insurance, and

life insurance plans frequently are provided.

The work of State police officers is sometimes dangerous. They always run the risk of an automobile accident while pursuing speeding motorists or fleeing criminals. Officers also face the risk of injury while apprehending criminals or controlling disorders.

Sources of Additional Information

Information about specific entrance requirements may be obtained from State civil service commissions or State police headquarters, usually located in each State capital.

CONSTRUCTION INSPECTORS (GOVERNMENT)

(D.O.T. 168.168)

Nature of the Work

Federal, State, and local government construction inspectors insure that recognized standards of construction are observed in public and private construction. They inspect the construction, alteration, or repair of highways, streets, sewer and water systems, dams, bridges, buildings, and other structures to insure compliance with building codes and ordinances, zoning regulations, and contract specifications.

An inspector's job is to insure compliance with building codes and ordinances, zoning regulations, and contract specifications.

Construction inspectors visit worksites to inspect recently completed construction. On large projects, they generally are required to inspect each new stage of construction. Several members of large inspection staffs may be assigned to a single complex project.

Construction inspectors generally specialize in one particular type of construction work. Broadly categorized, these are building, electrical, mechanical, and public works.

Building inspectors inspect the structural quality of buildings. Some may specialize—for example, in structural steel or reinforced concrete buildings. Before construction, inspectors determine whether the plans for the building or other structure comply with local zoning regulations and are suited to the engineering and environmental demands of the building site. They visit the worksite before the foundation is poured to inspect the positioning and depth of the footings. They inspect the foundation after it has been completed. The size and type of structure and the rate of completion determine the number of other visits they must make. Upon completion of the project, they conduct a final comprehensive inspection.

Electrical inspectors inspect the installation of electrical systems and equipment to insure that they work properly and are in compliance with electrical codes and standards. They visit worksites to inspect new and existing wiring, lighting, sound and security systems, and generating equipment. They also may inspect the installation of the electrical wiring for heating and air-conditioning systems, kitchen appliances, and other components.

Mechanical inspectors examine plumbing systems including septic tanks, plumbing fixtures and traps, and water, sewer, and vent lines. They also inspect the installation of the mechanical components of kitchen appliances, heating and air-conditioning equipment, gasoline and butane tanks, gas piping, and gas-fired appliances. Some specialize in inspecting boilers, mechanical components, or plumbing.

Public works inspectors insure that Federal, State, and local government construction of water and sewer systems, highways, streets, bridges, and dams conforms to detailed contract specifications. They inspect excavation and fill operations, the placement of forms for concrete, concrete mixing and pouring, and asphalt paving. They also record the amount of work performed and materials used so that contract payment calculations can be made. Public works inspectors may specialize in inspection of highways, reinforced concrete, or ditches.

While inspections are primarily visual, inspectors often use tape measures, metering devices, concrete strength measurers, and other test equipment during inspections. They often keep a daily log of their work, file written reports, and, if necessary, act on their findings. For example, construction inspectors notify the construction contractor, superintendent, or supervisor when they discover a detail of a project that is not in compliance with the appropriate codes, ordinances, or contract specifications. If the deficiency is not corrected within a reasonable period of time, they have authority to issue a "stop-work" order.

Many inspectors also investigate reported incidents of "bootlegging," construction or alteration that is being carried on without proper permits. Violators of permit laws are directed to obtain permits and submit to inspection.

Places of Employment

About 22,000 persons worked as government construction inspectors in 1976. More than three-fourths worked for municipal or county building departments. Public works construction inspectors were employed primarily at the Federal and State levels.

The employment of local government construction inspectors is concentrated in cities and in suburban areas undergoing rapid growth.

These governments employ large inspection staffs, including most of the inspectors who specialize in structural steel, reinforced concrete, and boiler inspection.

About half the construction inspectors employed by the Federal Government work for the Department of Defense, primarily for the U.S. Army Corps of Engineers.

Training, Other Qualifications, and Advancement

To become a construction inspector, several years of experience as a construction contractor, supervisor, or craft worker are generally required. Federal, State, and most local governments also require an applicant to have a high school diploma. High school preparation should include courses in drafting, mathematics, and English.

Workers who want to become inspectors should have a thorough knowledge of construction materials and practices in either a general area like structural or heavy construction, or in a specialized area such as electrical or plumbing systems, reinforced concrete, or structural steel; a significant number of construction inspectors have recent experience as carpenters, electricians, plumbers, or pipefitters.

Many employers prefer inspectors to be graduates of an apprenticeship program, to have studied at least 2 years toward an engineering or architectural degree, or to have a degree from a community or junior college, with courses in construction technology, blueprint reading, technical mathematics, English, and building inspection.

Construction inspectors must be in good physical condition in order to walk and climb about construction sites. They also must have a motor vehicle operator's license. In addition, Federal, State, and many local governments usually require that construction inspectors pass a civil service examination.

Construction inspectors receive most of their training on the job. During the first couple of weeks, working with an experienced inspector, they learn about inspection techniques; codes, ordinances, and regulations; contract specifications; and recordkeeping and reporting duties. They begin by inspecting less complex types of construction such as residential buildings. The difficulty of their assignments is gradually increased until they are able to handle complex assignments. An engineering degree is frequently needed in order to advance to supervisory inspector.

Since they advise representatives of the contruction industry and the general public on matters of code interpretation, construction practices, and technical developments, construction inspectors must keep abreast of new building code developments. The Federal Government and most State and large city governments conduct formal training programs for their construction inspectors to broaden their knowledge of construction materials, practices, and inspection techniques and to acquaint them with new materials and practices. Inspectors who work for small agencies that do not conduct training programs frequently can broaden their knowledge of construction and upgrade their skills by attending State-conducted training programs or by taking college or correspondence courses.

Employment Outlook

Employment of government construction inspectors is expected to grow faster than the average for all occupations through the mid-1980's. Because of the increasing complexity of construction technology and the trend toward the establishment of minimum professional standards for inspectors by State governments, job opportunities should be best for those who have some college education or who are currently employed as carpenters, electricians, or plumbers.

In addition to growth needs, job openings for construction inspectors will occur each year to replace those who die, retire, or leave the occupation for other reasons.

The number of new positions for construction inspectors will be largely affected by the level of new housing and commercial building activity. Because construction activity is sensitive to ups and downs in the economy, the number of job openings may fluctuate from year to year.

The demand for construction inspectors also should increase as they are given more responsibility for insuring safe construction of prefabricated buildings mass-produced in factories and assembled on the construction site.

Earnings and Working Conditions

Starting salaries of construction inspectors working in cities and towns averaged about $10,500 a year in 1974, according to a survey conducted by the Public Personnel Association. Top salaries for senior inspectors averaged $13,000. Salaries for supervisory inspectors were higher in large cities. Among geographic regions, the West had the highest average salaries, cities in the South the lowest.

In the Federal Government, construction inspectors started at $9,300 or $11,500 a year in 1977, depending on the amount and nature of their earlier work experience. Experienced construction inspectors were paid salaries ranging from $14,000 to $19,500, and more experienced workers were paid salaries ranging from $17,000 to over $22,000.

Construction inspectors often spend a large portion of their time traveling between worksites. Usually, an automobile is furnished for their use or their expenses are reimbursed if they use their own. Since they spend most of their time outdoors or in partially enclosed structures, they are exposed to all types of inclement weather.

Unlike the seasonal and intermittent nature of employment in many of the occupations associated with the construction industry, inspection work tends to be steady and year round. In 1976, according to limited information, unemployment was estimated to be less than 3 percent, a figure significantly lower than that for the Nation.

Sources of Additional Information

Persons seeking additional information on a career as a State or local

government construction inspector should contact their State or local employment service, or:

International Conference of Building Officials, 5360 South Workman Mill Rd., Whittier, Calif. 90601.

Persons interested in a career as a construction inspector with the Federal Government can get information from:

Interagency Board of the U.S. Civil Service Examiners for Washington, D.C., 1900 E St. NW., Washington, D.C. 20415.

HEALTH AND REGULATORY INSPECTORS (GOVERNMENT)

(D.O.T. 168.168, and .287)

Nature of the Work

Protecting the public from health and safety hazards, prohibiting unfair trade and employment practices, and raising revenue are included in the wide range of responsibilities of government. Health and regulatory inspectors help insure observance of the laws and regulations that govern these responsibilities. For discussion of a third type of inspector, see the statement on construction inspectors (Government) elsewhere in the *Handbook*.

The duties, titles, and responsibilities of Federal, State, and local health and regulatory inspectors vary widely. Some types of inspectors work only for the Federal Government while others also are employed by State and local governments. Many other workers employed as accountants, agricultural cooperative extension service workers, and other agricultural professionals also have inspection duties.

Health Inspectors. Health inspectors work with engineers, chemists, microbiologists, and health workers to insure compliance with public health and safety regulations governing food, drugs, and various other consumer products. They also administer regulations that govern the quarantine of persons and products entering the United States from foreign countries. The major types of health inspectors are: Food and drug, meat and poultry, and agricultural quarantine inspectors. In addition, some inspectors work in a field that is closely related to food inspection—agricultural commodity grading.

Most *food and drug inspectors* specialize in one area of inspection such as food, feeds and pesticides, weights and measures, or drugs and cosmetics. Some, especially those who work for the Federal Government, may be proficient in several of these areas. Working individually or in teams under the direction of a senior or supervisory inspector, they travel throughout a geographical area to check periodically firms that produce, handle, store, and market food, drugs, and cosmetics. They look for evidence of inaccurate product labeling, decomposition, chemical or bacteriological contamination, and other factors that could result in a product becoming harmful to consumer health. They assemble evidence of violations, using portable scales, cameras, ultraviolet lights, container sampling devices, thermometers, chemical testing kits, and other types of equipment.

Product samples collected as part of their examinations are sent to laboratories for analysis. After completing their inspection, inspectors discuss their observations with the management of the plant and point out any areas where corrective measures are needed. They prepare written reports of their findings, and, when necessary, compile evidence that may be used in court if legal actions must be taken to effect compliance with the law.

Federal and State laws empower *meat and poultry inspectors* to inspect meat, poultry, and their byproducts to insure that they are wholesome and safe for public consumption. Working as part of a constant onsite team under the general supervision of a veterinarian, they inspect meat and poultry slaughtering, processing, and packaging operations. They also check to see that products are labeled correctly and that proper sanitation is maintained in slaughtering and processing operations.

Agricultural quarantine inspectors protect American agricultural products from the introduction and spread of foreign plant pests and animal diseases. To safeguard crops, forests, and gardens, they inspect ships, aircraft, railroad cars, and motor vehicles entering the United States for the presence of restricted or prohibited plant or animal materials.

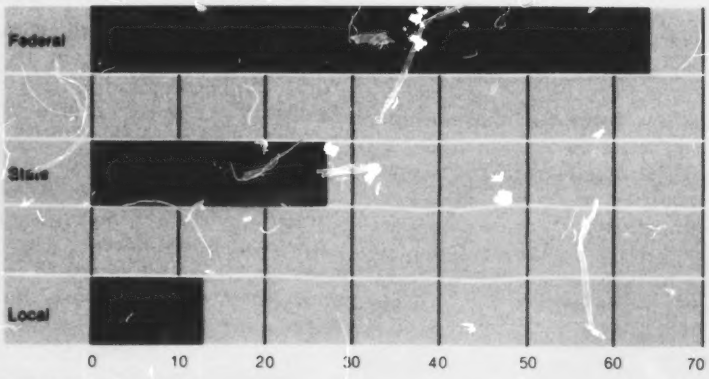
Environmental health inspectors, or sanitarians, work primarily for State and local governments. These inspectors perform a variety of inspection duties to help insure that the food people eat, the water they drink, and the air they breathe meet government standards. They check the cleanliness and safety of food and beverages produced in dairies and processing plants, or served in restaurants, hospitals, and other institutions. They often examine the handling, processing, and serving of food for compliance with sanitation rules and regulations.

Environmental health inspectors concerned with waste control oversee the treatment and disposal of sewage, refuse, and garbage. They examine places where pollution is a danger, perform tests to detect pollutants, and collect air or water samples for analysis. They determine the nature and cause of the pollution, then initiate action to stop it.

In large local and State health or agriculture departments, environmental health inspectors may specialize in areas of work such as milk and dairy products, food sanitation, waste control, air pollution, institutional sanitation, and occupational health. In rural areas and small cities, they may be responsible for a wide range of environmental health activities.

Agricultural commodity graders apply quality standards to various commodities to insure that retailers and consumers receive good and reliable products. They generally specialize in an area such as eggs and egg products, processed or fresh fruits and vegetables, grain, or dairy products. They inspect samples of a particular product to determine its quality and

Most health and regulatory inspectors are employed by the Federal Government



Source: Bureau of Labor Statistics

grade, and issue official grading certificates. Graders also may inspect the plant and equipment to insure that adequate sanitation standards are maintained.

Regulatory Inspectors. Regulatory inspectors insure compliance with various laws and regulations that protect the public welfare. Important types of regulatory inspectors are: Immigration; customs; aviation safety; mine; wage-hour compliance; alcohol, tobacco, and firearms; and occupational safety inspectors.

Immigration inspectors interview and examine people seeking admission, readmission, or the privileges of passing through or residing in the United States. They inspect the passports of those seeking to enter the United States to determine whether they are legally eligible to enter and to verify their citizenship, status, and identity. Immigration inspectors also prepare reports, maintain records, and process applications and petitions by aliens for privileges such as immigrating to or living temporarily in the United States.

Customs inspectors enforce the laws governing U.S. imports and exports. Stationed at airports, seaports, and border crossing points, they count, weigh, gauge, measure, and sample commercial cargoes entering and leaving the United States to determine the amount of tax that must be paid. They also inspect baggage and articles worn or carried by the passengers and crew of ships, aircraft, and motor vehicles to insure that all merchandise being brought through ports of entry is declared and the proper taxes paid.

Aviation safety officers insure that Federal Aviation Administration (FAA) regulations that govern the quality and safety of aircraft equipment and personnel are maintained. Aviation safety officers may inspect aircraft manufacturing, maintenance, or operations procedures. They usually specialize in inspecting either commercial or general aviation aircraft. They are responsible for the inspection of aircraft manufacturing and of major repairs. They also certify aircraft pilots and schools, pilot examiners, flight instructors, and instructional materials.

Mine inspectors work to insure the health and safety of miners and to promote good mining practices. To insure compliance with safety laws and regulations, mine inspectors visit mines and related facilities to obtain information on health and safety conditions.

Mine inspectors discuss their findings with the management of the mine, prepare written reports that incorporate their findings and decisions, and issue notices of findings that describe violations and hazards that must be corrected. They also investigate and prepare reports on mine accidents and direct rescue and firefighting operations when fires or explosions occur.

Wage-hour compliance officers inspect the employer's time, payroll, and personnel records to insure compliance with the provisions of various Federal laws on minimum wages, overtime, pay, employment of minors, and equal employment opportunity. They often interview employees to verify the employer's records and to check for any complaints.

Alcohol, tobacco, and firearms inspectors insure that the industries which manufacture these products comply with the provisions of revenue laws and other regulations on operating procedures, unfair competition, and trade practices. They spend most of their time inspecting distilleries, wineries, and breweries; cigar and cigarette manufacturing plants; wholesale liquor dealers and importers; firearms and explosives manufacturers, dealers, and users; and other regulated facilities. They periodically audit these establishments to determine that appropriate taxes are correctly determined and paid.

Places of Employment

About 115,000 persons worked as health and regulatory inspectors in 1976. Nearly two-thirds of all health and regulatory inspectors work for the Federal Government, although State and local governments also employ large numbers. The largest single employer of food and drug inspectors is the U.S. Food and Drug Administration, but the majority work for State governments. Meat and poultry inspectors and commodity graders who work in processing plants are employed mainly by the U.S. Department of Agriculture. Agricultural quarantine inspectors work either for the U.S. Public Health Service or the U.S. Department of Agriculture. Environmental health inspectors work primarily for State and local governments.

Regulatory inspectors work for various agencies within the Federal Government, mainly in regional and district offices throughout the United

States. Aviation safety officers work for the Federal Aviation Administration; wage-hour compliance officers, for the Department of Labor; mine inspectors, the Department of the Interior; and alcohol, tobacco, and firearms inspectors, the Treasury Department. Immigration, customs, and agricultural quarantine inspectors work at U.S. airports, seaports, border crossing points, and at foreign airports and seaports. They are employed by the Justice and Treasury Departments.

Training, Advancement, and Other Qualifications

Because inspectors perform such a wide range of duties, qualifications for employment in these positions vary greatly. The Federal Government requires a passing score on the Professional and Administrative Career Examination (PACE) for several inspector occupations, including immigration; customs; wage and hour compliance; alcohol, tobacco, and firearms; occupational safety; and consumer safety (food and drug). To take this examination, a bachelor's degree or 3 years of responsible work experience, or a combination of the two, are required. In some cases, agencies will give preference to an applicant whose course work or work experience is related to the field of employment.

Other Federal inspectors must pass an examination based on specialized knowledge, in addition to having work experience in related fields. These include commodity inspectors such as those in meat, poultry, livestock, and egg products.

Air safety inspectors must have considerable experience in aviation maintenance, and an FAA Air Frame and Power Plant certificate. In addition, various pilot certificates and considerable flight experience are required, with the type dependent on the inspection duties. Many air safety inspectors receive both their flight training and mechanical training in the Armed Forces. No written examination is required.

Applicants for mine safety inspector positions generally must have specialized work experience in mine management or supervision, or possess a skill such as electrical engineering (for mine electrical inspectors). In some cases, a general aptitude test may be required.

Some Civil Service registers, including those for agricultural quarantine inspectors and fruit and vegetable graders, rate applicants solely on their experience and education and require no written examination.

Qualifications for inspectors at the State and local level usually are similar to those for Federal employees. However, this may vary among government employers, particularly at the local level. Environmental health inspectors, called sanitarians in many States, must have a bachelor's degree in environmental health or the physical or biological sciences. In 35 States, they are licensed and their qualifications regulated by examining boards.

All inspectors are trained in the laws and inspection procedures related to their specific field through a combination of classroom and on-the-job training. In general, people who want to become health and regulatory inspectors should be able to accept responsibility and like detailed work. They should be neat and personable and able to express themselves well orally and in writing.

All Federal Government inspectors are promoted on a Civil Service "career ladder." This means that, assuming satisfactory work performance, workers will advance automatically, usually at 1-year intervals, to a specified maximum level. Above this level (usually supervisory positions), advancement is competitive, based on needs of the agency and individual merit.

Employment Outlook

Employment of health and regulatory inspectors as a group is expected to increase faster than the average for all occupations through the mid-1980's. The growth in employment of health inspectors is expected to be more rapid than that of regulatory inspectors. In addition to job opportunities stemming from growth, many inspectors will be needed each year to replace those who die, retire, or transfer to other occupations.

Increased food consumption caused by population growth and greater public concern over potential health hazards should create additional jobs for food and drug, meat and poultry, and other commodity inspectors and graders. Public concern for improved quality and safety of consumer products also should result in new legislation in these areas, requiring additional inspectors to insure compliance.

Aviation industry growth, increased international travel, and increases in the volume of U.S. imports and exports should continue to create new openings for aviation safety officers, quarantine and immigration inspectors, and customs inspectors. Increasing coal mining activity and concern over mine safety should create additional mine inspector jobs. Continued public pressure for equal employment rights should cause a growing need for wage-hour compliance officers.

Earnings and Working Conditions

With the exception of mine inspectors and aviation safety officers, the Federal Government paid health and regulatory inspectors and graders starting salaries of $9,303 or $11,523 a year in 1977, depending on the type of position and the qualifications of the applicant. Aviation safety officers and mining inspectors usually received starting salaries of $14,097.

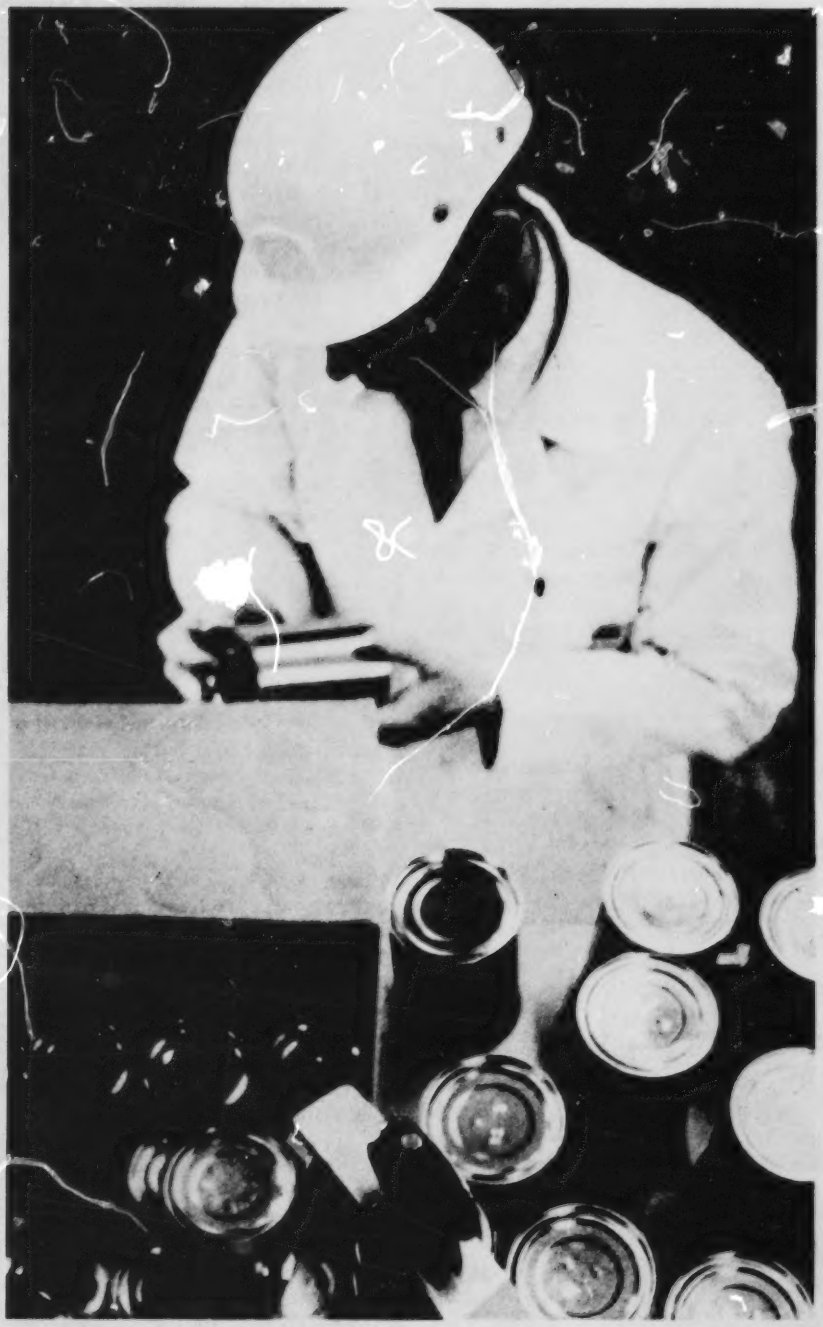
Salaries of experienced meat and poultry inspectors, egg product inspectors, agricultural quarantine inspectors, alcohol, tobacco, and firearms inspectors, and customs and immigration inspectors were over $14,000 a year in 1977. Experienced food and drug inspectors (consumer safety officers), mine inspectors, and wage-hour compliance officers usually received salaries of about $20,000 from the Federal Government in 1977. Experienced aviation safety officers averaged over $24,000 a year.

Nonsupervisory environmental health inspectors working for selected U.S. cities and counties received average starting salaries about $11,000 in 1976; those working for

State governments started at about $1,000 less. Experienced environmental health inspectors working for State governments earned between $11,500 and $15,200, but those in top supervisory and administrative positions had salaries between $15,500 and $20,500 in 1976.

Most health and regulatory inspectors live an active life, meeting many people and working in a variety of environments. Many travel frequently and are usually furnished with an automobile or reimbursed for travel expenses.

At times inspectors must work under unfavorable working conditions. For example, meat and poultry, and alcohol, tobacco, and firearms inspectors frequently come in contact with strong, unpleasant odors; mine inspectors often spend a great deal of time in mines where they are exposed to the same hazards as miners. Many inspectors work long and often irregular hours.



Public concern for improved quality and safety of consumer products will require additional inspectors to insure compliance.

Sources of Additional Information

For facts about inspector careers in the Federal Government, contact:

Interagency Board of U.S. Civil Service Examiners for Washington, D.C., 1900 E St. NW., Washington, D.C. 20415.

More detailed information on qualifications for Federal jobs is available from local Civil Service Commission offices or from individual Federal agencies.

Information about career opportunities as inspectors in State and local governments is available from State civil service commissions, usually located in each State capital, or from local government offices.

OCCUPATIONAL SAFETY AND HEALTH WORKERS

(D.O.T. 010.081; 012.081 and .188; 079.188; 168.168, .268 and .284; 379.387; 821.387; and 909.128)

Nature of the Work

People in the occupational safety and health field have the challenging job of insuring a safe and healthful environment for workers and safe products for consumers. Safety and health workers in a number of different occupations strive to control occupational accidents and diseases, property losses, and injuries from unsafe products. This statement discusses occupations in private industry; for a discussion of related occupations in government, see the statement on health and regulatory inspectors elsewhere in the *Handbook*.

The largest group of safety workers is *safety engineers*. Although all of them are concerned with preventing accidents, their specific tasks depend on where they work. For example, the safety engineer working in a large manufacturing plant (D.O.T. 012.081) may develop a comprehensive safety program covering several thousand employees. This usually entails detailed analysis of each job in the plant to identify potential hazards so that preventive measures can be taken. When accidents do occur, safety engineers in manufacturing plants investigate to determine the cause. If poor design, improper maintenance, or mechanical failure is involved, they use their technical skills to correct the situation and prevent its recurrence. When human error is the cause of an accident, safety engineers may establish training courses for plantworkers and supervisors or reemphasize existing ones.

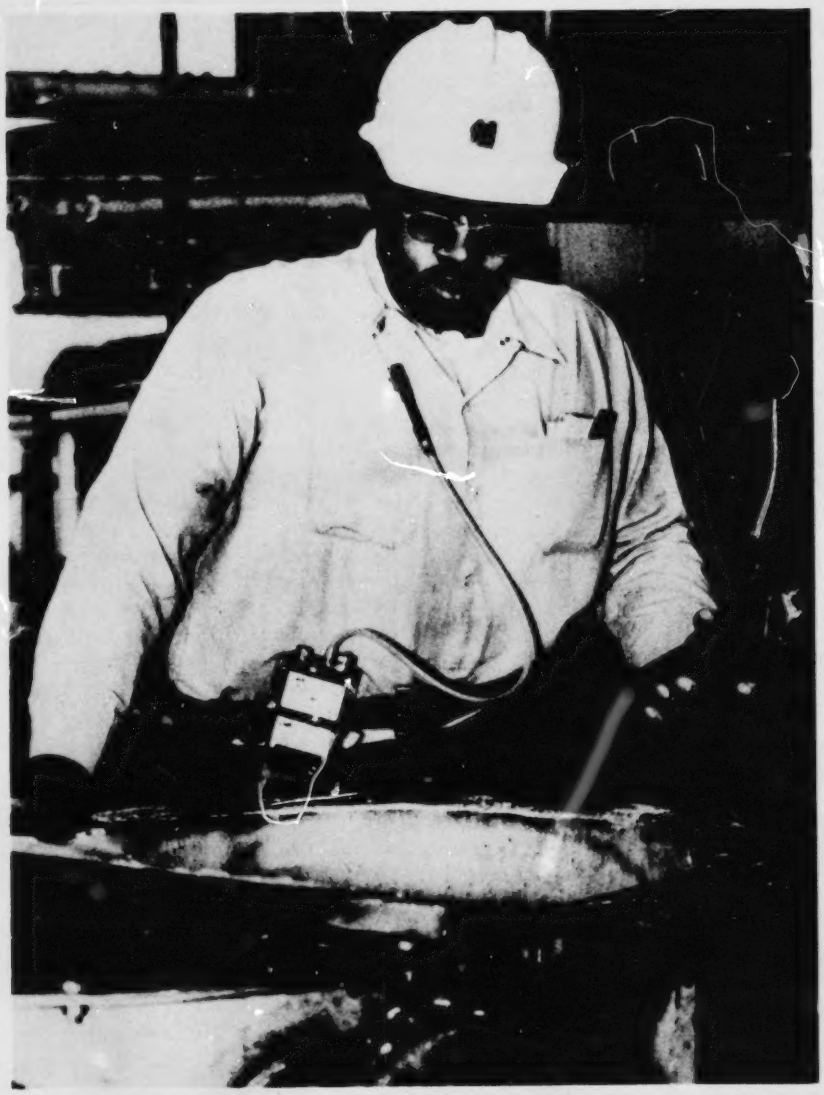
Safety engineers who work for trucking companies (D.O.T. 909.128) study schedules, routes, loads, and speeds to determine their influence on trucking accidents. They also inspect heavy rigs, such as trucks and trailers, to suggest ways of safer operation. In the mining industry, safety engineers (D.O.T. 010.081) may inspect underground or open-pit areas to insure compliance with State and Federal laws, design protective equipment and safety devices for mine machinery, or lead rescue activities during emergencies.

Many safety engineers are directly concerned with the safety of their company's product. They work closely with design engineers to develop models that meet all safety standards, and they monitor the manufacturing process to insure the safety of the finished product.

Safeguarding life and property against loss from fire, explosion, and related hazards is the job of the *fire protection engineer* (D.O.T. 012.188). Those who specialize in research investigate problems such as fires in high-rise buildings or the manufacture, handling, and storage of flammable materials. Fire protection engineers in the field use these research findings to identify hazards and devise ways to correct them. For example, new findings concerning flashpoints (the temperatures at which different materials will ignite) are valuable to the engineer designing storage facilities in a chemical plant.

Like safety engineers, fire protection engineers may have different job duties depending on where they work. One who works for a fire equipment manufacturing company may design new fire protection devices, while engineers in consulting firms work with architects and others to insure that fire safety is built into new structures. In contrast, fire protection engineers working for insurance rating bureaus (organizations that calculate basic costs of insurance coverage in particular areas) inspect private, commercial, and industrial properties to evaluate the adequacy of fire protection for the entire area. Many fire protection engineers have special expertise in one area or more of fire protection, such as sprinkler or fire detection systems.

Losses in the workplace cannot be reduced without measures to eliminate hazards to workers' health. Designing and maintaining a healthful work environment is the job of the *industrial hygienist* (D.O.T. 079.188). These health professionals are concerned with how noise, dust,



Safety engineers inspecting plant machinery for potential hazards.

vapors, and other hazards common to the industrial setting affect workers' health. After a problem is detected, perhaps by analyzing employee medical records, the industrial hygienist at the jobsite may take air samples, monitor noise levels, or measure radioactivity levels in the areas under investigation.

Other industrial hygienists work in private laboratories or in those maintained by large insurance companies or industrial firms. Laboratory hygienists analyze air samples, do research on the reliability of health equipment such as respirators, or investigate the effects of exposure to chemicals or radiation. Some hygienists specialize in problems of air and water pollution. For example, these health professionals may work with government officials, environmental groups, labor organizations, and plant management to develop a system to screen harmful substances before they enter and pollute a river.

Loss control and *occupational health consultants* (D.O.T. 168.168) in property-liability insurance companies perform many services for their clients. These range from correcting a single hazard in a small business to devising a program to eliminate or reduce all losses arising out of a large firm's operation. When dealing with a new account, the consultant makes a thorough inspection of the plant and then confers with management to formulate a program that meets the company's needs. The consultant may, for example, help set up plant health programs and medical services, assist plant personnel to insure that a new facility meets all safety requirements, or train plant safety people. Safety and health consultants also help their company's underwriters determine whether a risk is acceptable and the amount of premium to charge.

Places of Employment

An estimated 28,000 persons were engaged in occupational safety and health work in 1976. About one-quarter of these carried the professional designations, Certified Safety Professional; Certified Industrial Hygienist; or Member, Society of Fire Protection Engineers. Many others who are not certified performed professional level work, while a relatively small number were employed in the occupational safety and health field as technicians and inspectors. Property and liability insurance companies employ many occupational safety and health workers to provide engineering, consulting, and inspection services to their clients. Others worked for a variety of industrial, manufacturing, and commercial concerns.

These workers are needed wherever large numbers of people are concentrated and industrial development occurs. Insurance consultants generally have their headquarters in a region's major city and travel to and from the sites they visit.

Training, Other Qualifications, and Advancement

Entry level safety and health professionals generally need at least a bachelor's degree in engineering or science. A more specialized degree, such as one in safety management, industrial safety, or fire protection engineering, often is helpful in getting a good job. Many employers prefer applicants with a graduate degree in areas such as industrial hygiene, safety engineering, or occupational safety and health engineering, or those with prior industrial work experience. Some employers will hire graduates of 2-year college curriculums as technicians, particularly if they have work experience related to the job.

Continuing education is necessary to stay abreast of changing technologies, new ideas, and emerging trends. Many insurance companies offer training seminars and correspondence courses for their staffs. The Occupational Safety and Health Administration (OSHA) conducts courses for safety and health workers on topics such as occupational injury investigation and radiological health hazards. The recognized marks of achievement in the field are the designations Certified Safety Professional; Certified Industrial Hygienist; and Member, Society of Fire Protection Engineers. Certification is conferred by the Board of Certified Safety Professionals, the American Board of Industrial Hygiene, or the Society of Fire Protection Engineers after the candidate completes the required experience and passes an examination.

In addition to possessing technical competence, safety and health workers must be able to communicate well and motivate others. They should be able to adapt quickly to different situations, being equally at ease with a representative of a local union, a supervisor in the welding shop, or a corporate executive. Because physical activity is basic to the job, good physical condition is necessary.

In the insurance industry, safety and health workers can be promoted to department manager in a small branch office, move up to larger branch offices, and finally take an executive position in the home office. In industrial firms, they can advance to plant safety and health manager or corporate manager over several plants. Although extensive experience is required, technicians can advance to professional safety and health positions.

Employment Outlook

Employment of safety and health workers is expected to increase faster than the average for all occupations through the mid-1980's as growing concern for occupational safety and health and consumer safety continues to generate programs and jobs. Many openings will arise also to replace workers who die, retire, or leave their jobs for other reasons.

Much of the employment growth is expected to occur in industrial and manufacturing firms. Many firms now without a safety and health program are expected to establish one, and others will upgrade and expand existing programs in response to government requirements, union interest, and rising insurance costs. The number of safety and health workers in casualty insurance companies also will increase as more small employers request the services of their insurer's engineering or loss control department. Prospects should be best for graduates of occupational safety or health curriculums.

Earnings and Working Conditions

Salaries of safety and health workers vary widely according to education, experience, and specialty. In manufacturing firms, persons with a bachelor's degree generally started at between $12,000 and $15,000 a year in 1976, according to the limited data available. Those with a graduate degree usually received higher starting salaries, and technicians somewhat lower ones. Safety and health workers with several years' experience averaged $18,000 to $22,000, and corporate managers well over $25,000 a year.

The amount of travel required depends upon job specialty and geographic location. For example, the plant safety engineer may travel only to seminars and conferences, while the insurance consultant may spend about half the time traveling between worksites. Usually, a car is furnished or workers are reimbursed for the expenses of using their own vehicles.

Sources of Additional Information

For general information about safety careers, write to:

American Society of Safety Engineers, 850 Busse Highway, Park Ridge, Ill. 60068.

Also available from the Society is a booklet that lists colleges and universities offering degree programs in the occupational safety and health field.

Information concerning a career in industrial hygiene is available from:

American Industrial Hygiene Association, 66 S. Miller Rd., Akron, Ohio 44313.

Career information concerning fire protection engineering may be obtained from:

Society of Fire Protection Engineers, 60 Batterymarch St., Boston, Mass. 02110.

Career information on insurance loss control consulting is available from the home offices of many property-liability insurance companies.

The National Institute for Occupational Safety and Health of the U.S. Public Health Service provides general information on requirements for various careers in the occupational safety and health field, as well as lists of college and universities that award degrees in the various occupational safety and health disciplines. This information is available from:

Division of Training and Manpower Development, National Institute for Occupational Safety and Health, Robert A. Taft Laboratories, 4676 Columbia Parkway, Cincinnati, Ohio 45226.

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What to Look For in this Reprint

To make the *Occupational Outlook Handbook* easier to use, each occupation or industry follows the same outline. Separate sections describe basic elements, such as work on the job, education and training needed, and salaries or wages. Some sections will be more useful if you know how to interpret the information as explained below.

The TRAINING, OTHER QUALIFICATIONS, AND ADVANCEMENT section indicates the preferred way to enter each occupation and alternative ways to obtain training. Read this section carefully because early planning makes many fields easier to enter. Also, the level at which you enter and the speed with which you advance often depend on your training. If you are a student, you may want to consider taking those courses thought useful for the occupations which interest you.

Besides training, you may need a State license or certificate. The training section indicates which occupations generally require these. Check requirements in the State where you plan to work because State regulations vary.

Whether an occupation suits your personality is another important area to explore. For some, you may have to make responsible decisions in a highly competitive atmosphere. For others, you may do only routine tasks under close supervision. To work successfully in a particular job, you may have to do one or more of the following:

- motivate others
- direct and supervise others
- work with all types of people
- work with things—you need good coordination and manual dexterity
- work independently—you need initiative and self-discipline
- work as part of a team
- work with details, perhaps numbers or laboratory reports
- help people
- use creative talents and ideas
- work in a confined area
- do physically hard or dangerous work
- work outside in all types of weather

A counselor can help you find out more about your interests and abilities so you can judge whether a job's characteristics suit you.

The EMPLOYMENT OUTLOOK section tells whether or not the job market is likely to be favorable. Usually an occupation's expected growth is compared to the average projected growth rate for all occupations (20.1 percent between 1976 and 1985). The following phrases are used:

Much faster	50% or more
Faster	25.0 to 49.9%
About as fast	15.0 to 24.9%
Slower	4.0 to 14.9%
Little change	3.9 to -3.9%
Decline	-4.0% or more

Generally, job opportunities are favorable if employment is growing at least as fast as for the economy as a whole.

But, you would have to know the number of people competing with you to be sure of your prospects. Unfortunately, this supply information is lacking for most occupations.

There are exceptions, however, especially among professional occupations. Nearly everyone who earns a medical degree, for example, becomes a practicing physician. When the number of people pursuing relevant types of education and training and then entering the field can be compared with the demand, the outlook section indicates the supply/demand relationship as follows:

Excellent	Demand much greater than supply
Very good	Demand greater than supply
Good or favorable	Rough balance between demand and supply
May face competition	Likelihood of more supply than demand
Keen competition	Supply greater than demand

Competition or few job openings should not stop your pursuing a career that matches your aptitudes and interests. Even small or overcrowded occupations provide some jobs. So do those in which employment is growing very slowly or declining.

Growth in an occupation is not the only source of job openings because the number of openings from turnover can be substantial in large occupations. In fact, replacement needs are expected to create 70 percent of all openings between 1976 and 1985.

Finally, job prospects in your area may differ from those in the Nation as a whole. Your State employment service can furnish local information.

The EARNINGS section tells what workers were earning in 1976.

Which jobs pay the most is a hard question to answer because good information is available for only one type of earnings—wages and salaries—and not even this for all occupations. Although 9 out of 10 workers receive this form of income, many earn extra money by working overtime, night shifts, or irregular schedules. In some occupations, workers also receive tips or commissions based on sales or service. Some factory workers are paid a piece rate—an extra payment for each item they make.

The remaining 10 percent of all workers—the self-employed—includes people in many occupations—physicians, barbers, writers, and farmers, for example. Earnings for self-employed workers even in the same occupation differ widely because much depends on whether one is just starting out or has an established business.

Most wage and salary workers receive fringe benefits, such as paid vacations, holidays, and sick leave.

Workers also receive income in goods and services (payment in kind). Sales workers in department stores, for example, often receive discounts on merchandise.

Despite difficulties in determining exactly what people earn on the job, the Earnings section does compare occupational earnings by indicating whether a certain job pays more or less than the average for all nonsupervisors in private industry, excluding farming.

Each occupation has many pay levels. Beginners almost always earn less than workers who have been on the job for some time. Earnings also vary by geographic location but cities that offer the highest earnings often are those where living costs are most expensive.

What's an ad for the OOQ doing in a place like this?

The career information contained in the reprint you are reading was taken from the 1978-79 edition of the Occupational Outlook Handbook. But the Handbook is not the only source of useful career information published by the Bureau of Labor Statistics. The Handbook's companion, the Occupational Outlook Quarterly, is published four times during the school year to keep subscribers up to date on new occupational studies completed between editions of the Handbook. The Quarterly also gives practical information on training and educational opportunities, salary trends, and new and emerging jobs—just what people need to know to plan careers.

If you were a subscriber to recent issues of the Occupational Outlook Quarterly, you could have learned

- how to write an effective employment resume
- what the long-term employment prospects are for college graduates
- ways to earn college credit without going to college
- what's happening in the field of career education
- about career possibilities in such fields as journalism, mid- [illegible]ifery, and shorthand reporting.

The Quarterly is written in nontechnical language and is published in color. Find out why it has won so many awards for excellence.

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